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Research Article

**ANALYSIS OF FREQUENCY OF DIFFERENT
ULTRASONOGRAPHIC PATTERNS IN PATIENTS
PRESENTING WITH ACUTE SCROTUM**Dr Rabia Bashir¹, Dr Ambreen Bashir², Dr Muhammad Azhar Masood Khan³¹Rawalpindi Medical University²Multan Medical and Dental College³Islamabad Medical and Dental College

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Abstract:

Introduction: The acute scrotum is a medical emergency defined as scrotal pain, swelling, and redness of acute onset. **Aims and objectives:** The main objective of the study is to analyze the frequency of different ultrasonographic patterns in patients presenting with acute scrotum. **Material and methods:** This cross sectional study was conducted in Rawalpindi Medical University during March 2019 to December 2019. The data was collected from 50 patients of acute scrotum. The patients have performed an ultrasound examination positioned supine, and a rolled towel or sheet is placed between the legs to support the scrotum. **Results:** The data was collected from 50 patients of acute scrotum. Of the 19 patients who presented with painless scrotal mass or swelling, 16 had extra-testicular lesions and 3 had intra-testicular lesions. All the extra-testicular lesions were benign. Of the 3 intra-testicular lesions, one was due to tuberculosis epididymo-orchitis, one was non-Hodgkin's lymphoma, and one was metastasis from liposarcoma. Although, scrotal contents are the most accessible to clinical examination, serious dilemmas occur. **Conclusion:** It is concluded that ultrasonography b-mode and colour Doppler ultrasonography has become the imaging modality of choice for evaluating acute scrotal diseases in emergency room.

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INTRODUCTION:

The acute scrotum is a medical emergency defined as scrotal pain, swelling, and redness of acute onset. The differential diagnosis includes torsion, infection, trauma, tumor, and other rarer causes. The diagnostic evaluation begins with history-taking. Scrotal abnormalities can be divided into three groups, which are extra-testicular lesion, intra-testicular lesion and trauma. Causes of scrotal pain include inflammation (epididymitis, epididymo-orchitis, abscess), testicular torsion, testicular trauma, and testicular cancer [1]. Acute scrotum is defined as acute pain with or without scrotal swelling, may be accompanied by local signs or general symptoms. The most common differential diagnoses of the acute scrotum include: i) Torsion of the spermatic cord and ii) acute epididymitis or epididymo-orchitis. Less common diagnoses include: Strangulated hernia, segmental testicular infarction, testicular tumor, and idiopathic scrotal edema [2].

The acute scrotum in childhood or adolescence is a medical emergency. The acute scrotum is defined as scrotal pain, swelling, and redness of acute onset. Because the testicular parenchyma cannot tolerate ischemia for more than a short time, testicular torsion must be ruled out rapidly as the cause. Testicular torsion accounts for about 25% cases of acute scrotum, with an incidence of roughly 1 per 4000 young males per year [3].

There is an overlap in the clinical presentation of the different causes of acute scrotal pain. Imaging in clinically equivocal cases may lead to an early diagnosis of testicular torsion, and thus, decrease the number of unnecessary surgeries [4]. However there is no definite protocol of acute scrotum screening for the primary care physicians to follow. Early detection of testicular torsion through color Doppler is the only means to reduce the burden of morbidity [5]. Prompt diagnosis is required to differentiate surgically correctable lesions from abnormalities that can be adequately treated by medical therapy alone. Clinical symptoms and physical examination are often not enough for definite diagnosis due to pain and swelling that limit an accurate palpation of the scrotal contents.

Aims and objectives

The main objective of the study is to analyze the frequency of different ultrasonographic patterns in patients presenting with acute scrotum.

MATERIAL AND METHODS:

This cross-sectional study was conducted in Rawalpindi Medical University during March 2019 to December 2019. The data was collected from 50 patients of acute scrotum. The patients have performed an ultrasound examination positioned supine, and a rolled towel or sheet is placed between the legs to support the scrotum. The penis is displaced superiorly or super-laterally with a towel draped over it. Scanning is performed with a high-frequency (8–15-MHz) transducer in sequential sagittal and transverse planes. In cases of marked scrotal enlargement, we used a lower frequency transducer. Scanning of both testes is performed in sagittal and transverse planes with size measurements. Transverse side-by-side images of both testes should be obtained for comparison of echo texture, skin thickness, and color Doppler flow pattern.

Statistical analysis

The data was collected and analyzed using SPSS version 17.0. All the values were expressed in mean and standard deviation.

RESULTS:

The data was collected from 50 patients of acute scrotum. Of the 19 patients who presented with painless scrotal mass or swelling, 16 had extra-testicular lesions and 3 had intra-testicular lesions. All the extra-testicular lesions were benign. Of the 3 intra-testicular lesions, one was due to tuberculosis epididymo-orchitis, one was non-Hodgkin's lymphoma, and one was metastasis from liposarcoma. Although, scrotal contents are the most accessible to clinical examination, serious dilemmas occur. Physical examination adds only a little information and limited by acute pain and discomfort for patient which further limits the proper physical examination. The acute scrotum is defined as scrotal pain, swelling, and redness of acute onset. The differential diagnosis includes torsion, infection, trauma, tumor, and rarer causes. The diagnostic evaluation begins with history-taking. The patient should be asked about the exact temporal course of events, the intensity of the pain, and, in particular, when the pain began and in the trauma, what is the traumatic mechanism.

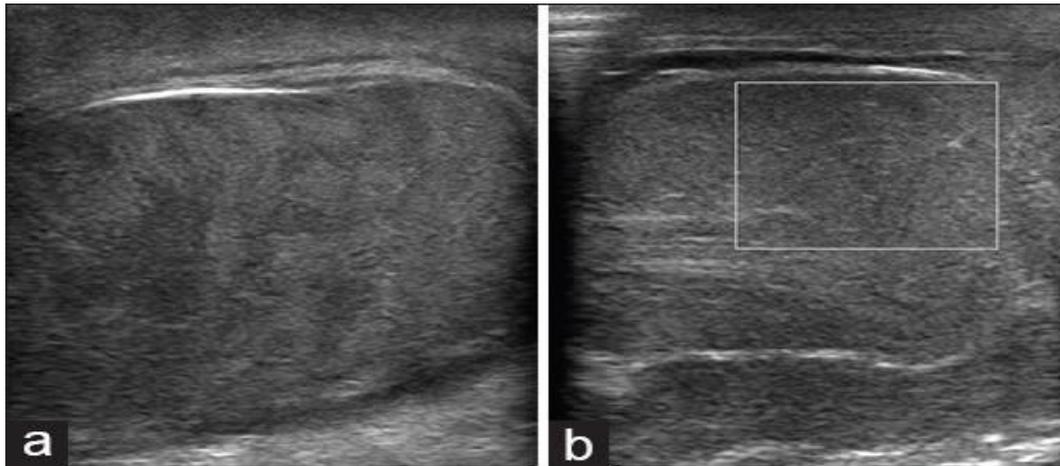


Figure 01: Epididymitis: Swelling, heterogeneous echotexture and increased vascularity of epididymis.

DISCUSSION:

Doppler imaging is used to determine vascular integrity. Testicular fractures are treated conservatively if normal flow is identified. If flow is absent, emergent surgery is indicated, as this finding represents ischemia. Many disease processes, including inflammation, testicular torsion, testicular trauma, and testicular cancer, may have similar clinical presentation as acute scrotum. Differentiation of these disease processes is important for proper management [6]. High resolution gray scale ultrasound helps to better characterize the scrotal lesions. Color Doppler ultrasound demonstrates perfusion of the lesions which aids in reaching a specific diagnosis. Clinical symptoms and physical examination are often not enough for definite diagnosis. On the other hand miss diagnosed testicular torsion may lead to organ loss and cosmetic deformity and compromised fertility [7]. A consecutive 150 cases were selected who came to Radiology & Imaging department with acute scrotal pain.

Epididymo-orchitis is the most common cause of acute scrotal pain in postpubertal men. The age of peak incidence is 40–50 years [8]. It usually results from a lower urinary tract infection and is less often hematogenous or traumatic in origin. Typically, patients present with the insidious onset of scrotal pain and swelling with associated fever, rigors, and lower urinary tract symptoms such as increased frequency, dysuria, and urgency [9, 10].

CONCLUSION:

It is concluded that ultrasonography b-mode and colour Doppler ultrasonography has become the imaging modality of choice for evaluating acute scrotal diseases in emergency room. Ultrasonography b-mode and colour Doppler ultrasonography has become the imaging modality of choice for evaluating acute scrotal diseases in emergency room.

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